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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,255	08/20/2003	Mark Cullen	CULLN-001B	6075

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EXAMINER	
NGUYEN, TAM M	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 03/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/644,255	CULLEN, MARK	
	Examiner	Art Unit	
	Tam M. Nguyen	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-88* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-88* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The rejection of claims 12-15 under 35 USC § 112 is withdrawn by the examiner in view of the amendment filed on December 27, 2005.

The objection to the specification is withdrawn by the examiner in view of the amendment filed on December 27, 2005.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 22, 23, 40, and 41 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 4 of copending Application No. 10/429,369. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims claim a process for removing sulfur compounds from a liquid fossil fuel by involving steps of oxidization.

The present claimed set does not claim a hydrodesulfurization step.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the copending claimed set by omitting the hydrodesulfurization step if the function of the step is not desirable.

Claims 22, 23, 40, and 41 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 12, and14 of copending Application No. 10/411,796. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims claim a process for removing sulfur compounds from a liquid fossil fuel by involving steps of oxidization.

The present claimed set does not claim a hydrodesulfurization step.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the copending claimed set by omitting the hydrodesulfurization step if the function of the step is not desirable.

Claims 20-28 and 40-46 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 35-39 of copending Application No. 10/431,666. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims claim a process for removing sulfur compounds from a liquid fossil fuel by involving steps of oxidization and.

The present claimed set does not claim a hydrodesulfurization step.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the copending claimed set by omitting the hydrodesulfurization step if the function of the step is not desirable.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 22-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Gunnerman et al. (6,500,219).

Gunnerman discloses a process for removing sulfur from a hydrocarbon feed (e.g., crude oil, diesel, gas oil, gasoline) by preheating the feed and contacting it with an oxidizing agent while exposing the feed to sonic energy and catalyst comprising nickel or tungsten. The process is operated at residence time of from about 0.3 to about 30 minutes, at a temperature of from 70-80° C, and at about atmospheric pressure. (See col. 3, lines 18-45; col. 4, lines 38-47; col. 5, line 23 through col. 6, line 37; example 1)

Claim 76 and 83-88 is rejected under 35 U.S.C. 102(b) as being anticipated by Inoue (3,616,375).

Inoue discloses a desulfurization process wherein a hydrocarbon feed (e.g., crude oil) is contacted with ultrasonic energy. The process is operated at ambient temperature and pressure. (See col. 1, lines 27-38; col. 2, lines 20-44; col. 5, lines 5-8; Examples I-V)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 40-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gunnerman et al. (6,500,219).

Gunnerman does not disclose that the process is operated in the absence of an aqueous phase.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Gunnerman by operating the process in the absence of an aqueous phase if the function of the aqueous phase is undesirable. See *Ex parte Wu*, 10 USPQ 2031 (Bd. Pat. App. & Inter. 1989). See also *In re Larson*, 340 F.2d 965, 144 USPQ 347 (CCPA 1965); and *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (deleting a prior art switch member and thereby eliminating its function was an obvious expedient).

Claims 58-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gunnerman et al. (6,500,219).

Gunnerman does not disclose that the process is operated in the absence of a surface active agent.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Gunnerman by operating the process in the absence of an a surface active agent if the function of the aqueous phase is undesirable. See *Ex parte Wu*, 10 USPQ 2031 (Bd. Pat. App. & Inter.1989). See also *In re Larson*, 340 F.2d 965, 144 USPQ 347 (CCPA 1965); and *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (deleting a prior art switch member and thereby eliminating its function was an obvious expedient).

Claims 78-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gunnerman et al. (6,500,219).

Gunnerman does not disclose that the process is operated in the absence of an oxidizing agent.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Gunnerman by operating the process in the absence of an oxidizing agent if the function of the aqueous phase is undesirable. See *Ex parte Wu*, 10 USPQ 2031 (Bd. Pat. App. & Inter. 1989). See also *In re Larson*, 340 F.2d 965, 144 USPQ 347 (CCPA 1965); and *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (deleting a prior art switch member and thereby eliminating its function was an obvious expedient).

Claims 77-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue (3,616,375) as applied to claim 76 above, and further in view of Gunnerman et al. (6,500,219).

Inoue does not specifically disclose a feed as claimed in claims 77-81.

The process of Gunnerman is as discussed above.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Inoue by utilizing a feedstock as taught by Gunnerman because any sulfur containing hydrocarbon feed can be treated in the process of Inoue.

Claim 82 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue (3,616,375) alone or in view of Gunnerman et al. (6,500,219).

Inoue does not disclose that the process has a residence time of from 1 second to 1 minute.

The process of Gunnerman is as discussed above.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Inoue by operating the process at the claimed residence times because Inoue teaches the process is durable to release at least part of the sulfur from the hydrocarbon feed. Therefore, it would be expected that at least one sulfur would be released from the feedstock when the resident time is 1 minute.

Alternatively, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Inoue by operating the process at the residence times as taught by Gunnerman because such residence times are effective in the process.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (571) 272-1452. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tam M. Nguyen
Examiner
Art Unit 1764

TN

Tam 3/6/06